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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,388	03/27/2001	Frank Sauer	2001P05445US	1674

7590

07/12/2004

Siemens Corporation
Intellectual Property Department
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EXAMINER

GOOD JOHNSON, MOTILEWA

ART UNIT

PAPER NUMBER

2672

DATE MAILED: 07/12/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,388

Applicant(s)

SAUER ET AL.

Examiner

Motilewa A. Good-Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-25 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the following communications:
Application, filed 03/27/2001; Amendment A, filed 06/30/2003; Amendment B, filed 11/10/2003; Amendment C, filed 12/15/2003; Amendment D, filed 05/03/2004.

This action is made final.

2. Claims 1-24 are pending in this application. Claims 1 and 13 are independent claims. Claim 25 has been added.
3. The present title of this application is "Augmented Reality Guided Instrument Positioning with Modulated Guiding Graphics" (as originally filed).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga, U.S. Patent Number 6,346,940 B1, "Virtualized Endoscope System", class 345/427, 02/2002, filed 02/1998.

Regarding claim 1, Fukunaga discloses a method for augmented reality guided instrument positioning (col. 2, lines 11-20), comprising the steps of: displaying a real view of an environment (col. 5, lines 34-36) determining a

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graphics guide for positioning an instrument; (col. 5, lines 35-39) and augmenting the real view with a rendering of the graphics guide (col. 5, lines 30-46) such that a transparency of at least one portion of the graphics guide is modulated (col. 7, lines 59-64)

However, it is noted that Fukunaga fails to disclose transparency in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide

Fukunaga disclose the semi transparency formation unit thins pixels according to conditions that include an adjustable degree of transparency and displaying a transparent endoscope image.

It would have been obvious to one of ordinary skill in the art at the time of the invention of Fukunaga to include transparency of an augmented view of the graphics guide including modulating the guide in and out of a view independent of a change in view, because Fukunaga disclose the semi transparency is prepared according to conditions and the conditions may include a modulated transparency, at a desired position on the image, as the virtual endoscope is moved about the image to view the represented portion of the image the endoscope is occupying, with and without the guide displayed.

Regarding claim 2, Fukunaga discloses rendering step comprises the step of varying the transparency of the at least one portion of the graphics guide with respect to other portions of the graphics guide to provide a substantially unobstructed view through the at least one portion of the graphics guide . . . (col. 7, lines 40-46)

However, it is noted that Fukunaga fails to disclose a transparent guide marker. I

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image, which is what Fukunaga wishes to accomplish.

Regarding claim 3, Fukunaga discloses varying the transparency of the at least one portion of the graphics guide during the pre-defined time intervals to provide a substantially unobstructed view through the at least one portion of the graphics guide . . . (col. 7, lines 59-64)

However, it is noted that Fukunaga fails to disclose a transparent guide marker.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image, which is what Fukunaga wishes to accomplish.

Regarding claim 4, Fukunaga discloses varying the transparency of each of a plurality of portions of the graphics guide during at least one predefined time interval to provide a substantially unobstructed view through each of the plurality of portion to at least a portion of the instrument . . .

Fukunaga discloses an adjustable degree of transparency, col. 7, lines 59-64.

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However, it is noted that Fukunaga fails to disclose a transparent guide marker.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image.

Regarding claim 5, Fukunaga discloses wherein plurality of portions is consecutive. (col. 8, lines 5-10)

Regarding claim 6, Fukunaga discloses varying the transparency of the at least one portion of the graphics guide such that the at least one portion repeatedly switches between transparent and less transparent. (thinning pixels based on a preset degree of semi transparency adjusted by the operator, col. 11, lines 44-57)

However, it is noted that Fukunaga fails to disclose a transparent guide marker.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also guide markers to avoid obstructing portions of the image.

Regarding claim 7, Fukunaga discloses constructing the graphics guide as a line, and rendering step comprises the step of modulating the transparency of the line with respect to time so that the line repeatedly fades in and out of view to provide a substantially unobstructed view . . . (the guiding marker used to indicate the direction could be a path, arrows, etc, col. 8, lines 1-10)

However, it is noted that Fukunaga fails to disclose a transparent line.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image.

Regarding claim 8, Fukunaga discloses constructing the graphics guide as a line, and rendering step comprises the step of modulating the transparency of portions of the line so that at least a portion of the instrument is substantially unobstructed . . . (the guiding marker used to indicate the direction could be a path, arrows, etc, col. 8, lines 1-10)

However, it is noted that Fukunaga fails to disclose a transparent line.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image.

Regarding claim 9, Fukunaga discloses rendering step comprises the step of modulating the transparency of portions of the line with respect to time and space so that at least a portion of the instrument is substantially unobstructed . . . during pre-defined time intervals. (semitransparent image so that portions of the image can be viewed unobstructed, col. 11, lines 44-67)

However, it is noted that Fukunaga fails to disclose a transparent line.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also markers to avoid obstructing portions of the image.

Regarding claim 10, Fukunaga discloses constructing the graphics guide as a cylinder . . . rendering step comprises the step of modulating the

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transparency of the cylinder with respect to time so that the cylinder repeatedly fades in and out of view . . .

Fukunaga discloses typical examples of guiding markers.

However, it is noted that Fukunaga fails to disclose a transparent cylinder.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also graphic markers to avoid obstructing portions of the image.

Regarding claim 11, Fukunaga discloses modulating the transparency of portions of the cylinder so that at least a portion of the instrument is substantially unobstructed . . . (semitransparent image sot that portions of the image can be viewed unobstructed, col. 11, lines 44)

However, it is noted that Fukunaga fails to disclose a transparent cylinder.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but also graphic guide markers to avoid obstructing portions of the image.

Regarding claim 12, Fukunaga discloses rendering step comprises the step of modulating the transparency of portions of the cylinder with respect to time and space so that at least a portion of the instrument is substantially unobstructed . . . during pre-defined time intervals. (an operation path history that registers the path position and view direction each times the instrument changes to reproduce the image on the display unit, col. 8, lines 32-47)

However, it is noted that Fukunaga fails to disclose a transparent line.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to include not only semi-transparent images, but graphic also guide markers to avoid obstructing portions of the image.

Regarding claims 13-24, they are rejected based upon similar rational as above claims 1-12 respectively.

However, it is noted that Fukunaga fails to disclose a video camera providing a real view.

Fukunaga discloses the endoscope system provides real images on the monitor, col. 5, lines 30-35, and the system includes plural input devices, col. 29, lines 1-13.

It would have been obvious to include a video camera as an input device to include all forms of input for image processing, because video cameras are well know in the art as an apparatus for providing real images.

Regarding claim 25, it is rejected based upon similar rational as above claim 2.

Regarding claims 26 and 27, Fukunaga fails to disclose wherein the real view is a contemporaneous view from a camera of the instrument.

Fukunaga discloses a command to display body position direction compass image including a view of the body relative to the instrument, i.e. endoscope tip, col. 14, lines 35-67)

It would have been obvious to include a view from a camera to the instrument to include the display corresponding to a desired visual field from a desired viewpoint position, as disclosed in Fukunaga.

Response to Arguments

6. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj



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